

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 84-122 are now present in this application. Claims 84, 86, 103, 105, 109, 112, 114-115, and 119-121 are independent. By this Amendment, claims 84, 86, 96-98, 103, 105, 106, 109-110, 112, 114-116 and 119-122 are amended. No new matter is involved.

Reconsideration of this application, as amended, is respectfully requested.

Examiner Interview

Applicants acknowledge with appreciation the courtesies extended by Examiners Mahafkey and Hendricks to applicants, i.e., Mr. Haschen and Mr. Patterson, and their undersigned representative, Mr. Webster, during the personal interview conducted on January 18, 2007. During that interview, a number outstanding issues were discussed. The amendments above, are based on the dialogue that occurred at the interview.

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claims 84-122 stand rejected under 35 U.S.C. § 112, 1st Paragraph for failing to comply with the written description requirement. This rejection is respectfully traversed.

The rejection is based on the premise that claims 84, 103, 105, 109, 112, 114, 115 and 119-121 “recite ‘over’ and ‘greater than’ certain percentages, thus indicating the end of the range as up to 100%.” The Office Action than indicates that there is no basis in the originally filed disclosure for ranges of up to 100% for crude protein, RUP of the crude protein, methionine and lysine.

Applicants respectfully disagree with the fundamental premise of this rejection, i.e., that by reciting, in the claim preamble, a product having a crude protein level of over about 30% of the product composition, that the end range of crude protein that is claimed is 100%.

Applicant’s written description has clear support for “a crude protein level of over about 30% of the product composition,” a fact which is not challenged in the rejection.

The only way that Applicant can reasonably be considered to be claiming up to 100% crude protein, for example, is if the claims actually said that, and none of these claims actually say that.

Moreover, claims are interpreted by one of ordinary skill in the art and no one of ordinary skill in the art can reasonably construe the pending claims as claiming crude protein levels or RUP of the crude protein or methionine or lysine levels up to 100% of the product composition.

Furthermore, the Court of Customs and Patent Appeals, a predecessor to the Court of Appeals for the Federal Circuit, has held "that a claim may be broader than the specific embodiment disclosed in a specification is in itself of no moment." *In re Rasmussen*, 650 F.2d 1212, 1215, 211 USPQ 323,326 (CCPA 1981). This case was cited in Ralston Purina Company v. Far-Mar-Co., Inc., 227 USPQ 177 (Fed. Cir. 1985), which indicated that the open ended range claims of U.S. patent 3,940,495 were proper and were supported by the description of a parent application. Additionally, the Court of Customs and Patent Appeals stated, in *In re Smythe and Shamos*, 178 USPQ 279 (CCPA 1073) that mere omission of claim limitations does not suggest omission of steps or part. Applicants continue to believe that these cases support a conclusion that the open ended ranges in the claims are completely proper and failure to recite an upper limit in the claims corresponding exactly to an upper limit disclosed in the specification "is of no moment." Further, in this regard, the attention of the Examiner is directed to *Bilstead v. Wakalopoulos*, 72 USPQ2d 1785 (Fed. Cir. 2004), which discusses these two cited cases and clearly concludes that the issue involved is whether an Applicant's disclosure, as filed, "reasonably conveys to a person skilled in the art that the inventor had possession of the claimed subject matter at the time of the earlier filing date." *Eiselstein v. Frank*, 52 F.3d 1035, 1039 [34 USPQ2d 1467] (Fed. Cir. 1995). The court summarized the "Ralston Purina" case by stating that, in *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 772 F.2d 1570, 1575-77[227 USPQ 177](Fed. Cir. 1985), this court affirmed a trial court's finding that several open-ended ranges were supported by a parent written description. In particular, this court affirmed the trial court's conclusion that the limitation "protein content of at least about that of solvent extracted soybean meal" was supported by the written description disclosing solvent extracted soybean meal with a protein content of about 50%. *Id.* at 1575-76. Although open-ended and although the parent

disclosure did not teach materials having greater than 50% protein content, this court said, "The trial court found that the parent disclosure does support the claim language, based on the 1964 disclosure and on consideration of the knowledge possessed by those skilled in the art of extrusion of both farinaceous and proteinaceous vegetable materials in 1964." *Id.* at 1576. We then noted that soybean meals with protein contents above 50% were readily available commodities in 1964. We concluded that "the court did not clearly err in determining that the parent's disclosure adequately supports the protein content of the claims in issue." *Id.* at 1576.

Applicants respectfully submits that the case law cited above, when applied to the facts of this case, supports the proposition that Applicant's open ended claimed ranges satisfy the requirements of 35 USC §112, first paragraph.. Applicants respectfully submit that claims are interpreted to be workable and read on operative embodiments.

Nevertheless, in order to reduce and simplify issues to place this Application in condition for allowance, these claims are being amended to recite operative, upper limits for the parameters in issue in this rejection.

BASIS FOR CLAIMED AMINO ACID RANGES

As discussed during the aforementioned interview, Applicants present the following information to explain the basis of the upper limits in the claims, as amended above, which is found in Applicant's disclosure, as originally filed.

This Application discloses both systems (apparatus) and methods for adding nutrient sources to wet distillers grains in order to predictably enhance the nutritive values of the resulting end product. Using the systems and methods of the invention, a wide variety of end products can be made. For the purpose of determining upper limits on the methionine and lysine in the UIP of these end products, formulations of the extreme high and low products have been hypothesized within the bounds of the crude protein levels found in the examples contained in the patent and shown in Table No. 17.

As a first step in establishing the upper limits on the UIP amino acid levels for methionine and lysine in the examples disclosed in this Application, one has to validate the amino acid values of the raw materials. Validation of the values is established when the

percentages for crude protein and methionine and lysine in the UIP match the analyzed values that are presented in Tables Nos. 13, 15 and 16.

Table No. 16 of the patent gives the analyzed crude protein levels of the raw materials and shows them as 29.6% (DM basis) for corn distillers grains and 53.6% for soybean meal.

Table No. 15 gives the results of amino acid analysis of the same materials and it gives values of methionine of 2.07% and lysine of 2.13% of the UIP for corn distillers grains and methionine of 1.70% and lysine of 6.35% of the UIP for soybean meal. It is important to note that these analysis values are prior to mixing and cooking the raw materials.

In the experimentation leading to the patent, a series of nine (9) samples were subjected to various drying temperatures and resulting end product temperatures as listed in Table No. 14. The 9 samples were all of the same formulation mixture and thus the results of analysis were pooled and are given in Table No. 13. The product averaged 38.66% crude protein on an as fed basis. This equates to 43.733% on a dry matter basis. The UIP averaged 74.5% of the crude protein with the methionine at 1.58% of the UIP and the lysine at 4.67% of the UIP.

Calculating the amino acid levels in the UIP of the end product according to procedures established by the publication entitled, "NRC Nutrient Requirements of Dairy Cattle, 7th Revised Edition, 2001, published by the National Academy press, Washington, D.C., for the 9 samples of Table No. 13 using the actual values for methionine and lysine that are given in the patent for the raw materials (prior to cooking) as per Table No. 15 results in values that are greater than the measured amino acids of the end products disclosed in Table No. 13. The methionine calculates to 1.803% of the UIP as compared to an analyzed value of 1.58% and the lysine calculates to 5.176% of the UIP as compared to an analyzed value of 4.67%. The reason for this is appears to be that there is some destruction of these amino acids during cooking. From the above figures, in order to ascertain the actual amino acid levels in the end product samples disclosed by Applicants, one should reduce the calculated methionine values by 12.37% and the lysine values by 9.78%.

Applying these reductions to the amino acid values given for the raw materials in Table No. 15, results in a methionine value to use for corn distillers grains of 1.814% of the UIP and for soybean meal 1.490%. The lysine is similarly reduced for corn distillers grains to 1.923%

and for soybean meal to 5.729% of the UIP. Validation of these numbers is by way of a calculation of the end product formulation that results in identical values to the actual test results of Table No. 13. To keep the calculations as simple as possible, the numbers are given on a dry matter basis only.

The following detailed examples are presented in support of the aforementioned discussion:

(1) Verification of Values in Table No. 13:

Formulation for 43.733% crude protein end product (average of 9 samples):

Corn distillers grains at	41.1125 lbs x 29.6% crude protein =	12.1693 lbs protein
Soybean meal at	<u>58.8875 lbs x 53.6% crude protein =</u>	<u>31.5637 lbs protein</u>
	100.0000 lbs	43.7330 lbs protein

Methionine

Corn Distillers grains: 12.1693 lbs CP x 75% UIP x 1.814% Meth = 0.16556 lbs Meth
Soybean Meal : 31.5637 lbs CP x 75% UIP x 1.490% Meth = 0.35272 lbs Meth
43.7330 lbs CP x 75% UIP x 1.580% Meth = 0.51828 lbs Meth

Lysine

Corn Distillers grains: 12.1693 lbs CP x 75% UIP x 1.923% Lys = 0.17551 lbs Lys
Soybean Meal : 31.5637 lbs CP x 75% UIP x 5.729% Lys = 1.35621 lbs Lys
43.7331 lbs CP x 75% UIP x 4.670% Lys = 1.53172 lbs Lys

The above calculation is as per the methods found in the "NRC Nutrient Requirements of Dairy Cattle, 7th Revised Edition, 2001" from the National Academy Press, Washington, DC. The contribution of crude protein and UIP from each ingredient is multiplied by the appropriate percentage of amino acid. The total lbs of bypass amino acid is accumulated and then expressed as a percentage of the total UIP.

In the above examples the total weight of methionine and lysine calculated for the 9 samples when expressed as a percentage of the UIP match the values found in Table No. 13. This validates that Applicants' numerical values for the UIP amino acid contribution of corn distillers grains and soybean meal are correct.

(2) Verification of Amino Acid Levels in Lowest and Highest Protein End Product based on Table No. 17:

In Table No. 17 of the patent experimental results are shown of a number of formulations that were cooked and tested for UIP content. In the table the lowest protein (dry matter basis) is 30% and this is for straight corn distillers grains. Applicants' disclosed invention adds nutrient sources to corn distillers grains in an infinite number of formulations. The highest protein in Table No. 17 is 57.9% where some blood meal was also used as a nutrient source.

While the lower limit in protein for the invention is that of pure corn distillers grains, the upper limit in protein has not been met at the 57.9%. Applicants' disclosed invention states in the summary section in line [0013] "The systems and methods according to this invention permit users to produce a large variety of nutritional supplements depending on the purchaser's specifications. Sophisticated nutritional and economic demands of the animal agricultural industry are achieved in a predictable manner using the systems, methods and resultant products according to this invention." Examples in Table No. 17 do not cover the infinite number of formulations that are possible and only represent a small sampling of possibilities. However, for purposes of establishing ranges of the amino acid content of the UIP, formulations approximating ranges of certain specific amino acid content of what one of ordinary skill in the art would consider a realistic range of formulations are calculated below.

(a) Lowest Protein Formulation (based on 31.0% CP at 3% moisture = 31.958% CP on dry matter basis – as disclosed in Table No. 17):

Formulation for 31.958% crude protein end product:

Corn distillers grains at 90.1718 lbs x 29.6% crude protein = 26.6901 lbs protein

Soybean meal at 9.8282 lbs x 53.6% crude protein = 5.2679 lbs protein

100.0000 lbs

31.9580 lbs protein

Methionine

Corn Distillers grains: $26.6901 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.814\% \text{ Meth} = 0.36312 \text{ lbs Meth}$

Soybean Meal : $5.2679 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.490\% \text{ Meth} = 0.05887 \text{ lbs Meth}$

$31.9580 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.761\% \text{ Meth} = 0.42199 \text{ lbs Meth}$

Lysine

Corn Distillers grains: $26.6901 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.923\% \text{ Lys} = 0.38494 \text{ lbs Lys}$

Soybean Meal : $5.2679 \text{ lbs CP} \times 75\% \text{ UIP} \times 5.729\% \text{ Lys} = 0.22635 \text{ lbs Lys}$

$31.9580 \text{ lbs CP} \times 75\% \text{ UIP} \times 2.550\% \text{ Lys} = 0.61129 \text{ lbs Lys}$

A product with the lowest protein would have methionine values at about 1.76% and lysine at 2.55% of the UIP.

(b) Highest Protein Formulation using only Corn Distillers Grains and Soybean Meal
(17% Corn Distillers Grains + 83% Soybean Meal (dry matter basis), as disclosed in Table No.
17):

Formulation for 49.52% crude protein end product:

Corn distillers grains at $17.0000 \text{ lbs} \times 29.6\% \text{ crude protein} = 5.0320 \text{ lbs protein}$

Soybean meal at $83.0000 \text{ lbs} \times 53.6\% \text{ crude protein} = 44.4880 \text{ lbs protein}$

100.0000 lbs 49.5200 lbs protein

Methionine

Corn Distillers grains: $5.032 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.814\% \text{ Meth} = 0.06846 \text{ lbs Meth}$

Soybean Meal : $44.488 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.490\% \text{ Meth} = 0.49715 \text{ lbs Meth}$

$49.520 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.523\% \text{ Meth} = 0.56561 \text{ lbs Meth}$

Lysine

Corn Distillers grains: $5.032 \text{ lbs CP} \times 75\% \text{ UIP} \times 1.923\% \text{ Lys} = 0.07257 \text{ lbs Lys}$

Soybean Meal : $44.488 \text{ lbs CP} \times 75\% \text{ UIP} \times 5.729\% \text{ Lys} = 1.91154 \text{ lbs Lys}$

$49.520 \text{ lbs CP} \times 75\% \text{ UIP} \times 5.342\% \text{ Lys} = 1.98411 \text{ lbs Lys}$

A product produced to the highest protein level using only soybean meal as the nutrient source with the corn distillers grains would have a methionine level of about 1.52% and lysine of about 5.34% of the UIP.

Table No. 17 also shows result using blood meal in addition to soybean meal as the nutrient source to be mixed with the corn distillers grains. Blood meal is an extremely high protein ingredient (100% CP on DM basis) and it has a UIP of 95.2% of the CP with 1.17% methionine and 8.87% lysine in the UIP.

(c) Formulation using Blood Meal as a Nutrient Source in addition to Soybean Meal (43.0% Corn Distillers Grains + 42% Soybean Meal + 15% Blood Meal (wet basis), as disclosed in Table No. 17):

Formulation for 58.0% crude protein end product:

Corn distillers grains at	20.0000 lbs x 29.6% crude protein =	5.9200 lbs protein
Soybean meal at	60.0000 lbs x 53.6% crude protein =	32.1600 lbs protein
Blood Meal at	20.0000 lbs x 100.0% crude protein =	20.0000 lbs protein
	100.0000 lbs	58.0800 lbs protein

Methionine

Corn Distillers grains:	5.920 lbs CP x 75.00% UIP x 1.814% Meth =	0.08054 lbs Meth
Soybean Meal	: 32.160 lbs CP x 75.00% UIP x 1.490% Meth =	0.35939 lbs Meth
Blood Meal	: 20.0000 lbs CP x 95.20% UIP x 1.170% Meth =	0.22277 lbs Meth
	58.080 lbs CP x 81.96% UIP x 1.392% Meth =	0.66270 lbs Meth

Lysine

Corn Distillers grains:	5.920 lbs CP x 75.00% UIP x 1.923% Lys =	0.08538 lbs Lys
Soybean Meal	: 32.160 lbs CP x 75.00% UIP x 5.729% Lys =	1.38183 lbs Lys
Blood Meal	: 20.0000 lbs CP x 95.20% UIP x 8.870% Lys =	1.68885 lbs Lys
	58.080 lbs CP x 81.96% UIP x 6.630% Lys =	3.15606 lbs Lys

Using blood meal as a nutrient source has resulted in a methionine level of 1.39% of the UIP and a lysine of 6.63% of the UIP. Please note that due to the much higher UIP content of blood meal the end product will have an elevated UIP. This was evident in Table No. 17 for the 57.8% protein product containing 15% blood meal.

(d) Formulation using Blood Meal as a Nutrient Source in addition to Soybean Meal (based on 75.6% CP on dry matter basis, the use of different blood meal formulations being disclosed in paragraph [0090]):

Formulation for 58.0% crude protein end product:

Corn distillers grains at	5.0000 lbs x 29.6% crude protein =	1.4800 lbs protein
Soybean meal at	45.0000 lbs x 53.6% crude protein =	24.1200 lbs protein
Blood Meal at	50.0000 lbs x 100.0% crude protein =	50.0000 lbs protein
	100.0000 lbs	75.6000 lbs protein

Methionine

Corn Distillers grains:	1.4800 lbs CP x 75.00% UIP x 1.814% Meth =	0.02014 lbs Meth
Soybean Meal	: 24.1200 lbs CP x 75.00% UIP x 1.490% Meth =	0.26954 lbs Meth
Blood Meal	: 50.0000 lbs CP x 95.20% UIP x 1.170% Meth =	0.55692 lbs Meth
	75.6000 lbs CP x 88.36% UIP x 1.267% Meth =	0.84660 lbs Meth

Lysine

Corn Distillers grains:	1.4800 lbs CP x 75.00% UIP x 1.923% Lys =	0.02135 lbs Lys
Soybean Meal	: 24.1200 lbs CP x 75.00% UIP x 5.729% Lys =	1.03638 lbs Lys
Blood Meal	: 50.0000 lbs CP x 95.20% UIP x 8.870% Lys =	4.22212 lbs Lys
	75.6000 lbs CP x 88.36% UIP x 7.904% Lys =	5.27985 lbs Lys

A formulation representing a very high protein level by using up to 50% blood meal as the nutrient source in addition to the soybean meal would have a methionine content of 1.267% of the UIP and a lysine of 7.904% of the UIP.

Summary:

1. The aforementioned analysis verifies/validates the specific amino acid values in the raw ingredients and uses them to accurately determine specific amino acid levels in the 9 sample end product average reported in Table No. 13.

2. The calculation of the lowest specific amino acid levels in the end products of Table 17 results in values of 1.76% methionine and 2.55% lysine as a percentage of the UIP. This supports the claimed upper limit for methionine of "up to about 2%".

3. The calculation of the highest protein end product (containing blood meal) results in values of 1.27% methionine and 7.90% lysine as a percentage of the UIP, which supports the upper limit on lysine of "up to about 8%".

Accordingly, reconsideration and withdrawal of this rejection of claims 84, 103, 105, 109, 112, 114, 115 and 119-121 are respectfully requested.

Claims 96, 106, 110, 116 and 122 are rejected under 35 USC §112, first paragraph, because they discuss an increase relative to the end product. This rejection is respectfully traversed. While Applicants do not interpret the claims in this manner, Applicants have amended these claims to clearly state that the claimed increases are with respect to the original products, as discussed during the aforementioned interview.

Accordingly, reconsideration and withdrawal of this rejection of claims 96, 106, 110, 116 and 122 are respectfully requested.

Claim 98 is rejected under 35 USC §112, first paragraph, as not having support for the claimed range of from about 350 degrees Fahrenheit to about 500 degrees Fahrenheit. This rejection is respectfully traversed based on the amendment of claim 98 to recite that what is varied in the recited range is the air temperature. Support for this amendment to claim 98 is found in Applicants' original disclosure, including paragraph [0070] of this Application, as published in US2005/0255220.

Accordingly, reconsideration and withdrawal of this rejection of claim 98 are respectfully requested.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 84-122 are rejected under 35 USC §112, second paragraph for reciting a relative term. This rejection is respectfully traversed.

The Office Action indicates that the term “an empirical relationship” in claims 84, 86, 103, 105, 109, 112, 114, 115 and 119-121 is a relative term that renders the claims indefinite. The Office Action further asserts that (1) this terminology is not defined by the claim; (2) the specification does not provide a standard for ascertaining the requisite degree; and (3) one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Applicants respectfully disagree for the following reasons.

Firstly, Applicants have amended these claims to positively recite a combination of features including adjusting the temperature and/or the moisture content of the enhanced nutrient value by-product-nutrient source mixture based on an empirically derived relationship that relates the UIP as a percent of the crude protein (CP) to an end product temperature in a predictable and repeatable manner to produce said end product. Support for this language is found in Applicants’ originally filed Application including, for example, in paragraph [0072] of Applicants’ published Application, which states that regression analysis of the RUP/UIP of the nine batches heated and dried according to the methods described above yielded the following results. The R square value of the nutrient values of the nine batches indicates that 85.68% of the variation in UIP is the result of the end temperature of the mixture. This results in a calculated significance level of 0.0343% which means that 99.97% of the time, this RUP/UIP increase will occur. In other words, these results are highly predictable and repeatable.

In view of this, Applicants respectfully submit that Applicants have full support in their Application, as filed, for the language in issue, that the language in issue has a clear and definite meaning to one of ordinary skill in the art, and that the claim language of adjusting the temperature and/or the moisture content of the enhanced nutrient value by-product-nutrient source mixture based on an empirically derived relationship that relates the UIP as a percent of the crude protein (CP) to an end product temperature in a predictable and repeatable manner to produce said end product, is actually based on objective factual evidence that 99.97% of the time, this RUP/UIP increase will occur.

Furthermore, one of ordinary skill in the art only has to follow Applicants' detailed disclosure, which includes numerous examples, to empirically derive relationship that relates the UIP as a percent of the crude protein (CP) to an end product temperature in a predictable and repeatable manner to produce end products for other starting materials than those explicitly disclosed.

Accordingly, claims 84, 86, 103, 105, 109, 112, 114, 115 and 119-121 fully comply with the requirements of 35 USC §112, second paragraph.

Nevertheless, in an attempt to place this Application in condition for allowance, Applicants have amended the independent claims to include a specific empirical formula, which as discussed during the aforementioned interview.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Claim 86 stand rejected because it recites the relative term "temperature." Applicants respectfully traverse this rejection, because of the amendment of claim 86 to recite temperature in terms of degrees Fahrenheit. Support for this amendment is found describing the working examples throughout Applicant's originally filed Application. In this regard, reference is made, for example, to paragraphs [0060], [0062], [0064], [0070], [0075], [0076], [0080-0081], [0085], [0086] and [0094], in which the processing temperatures are expressed in terms of degrees Fahrenheit. This issue was discussed during the aforementioned interview and Examiners Mahafkey and Hendricks appeared to be satisfied that amendment of claim 86 in this regard would be proper, subject to reviewing Applicants' arguments in this Amendment.

Accordingly, reconsideration and withdrawal of this rejection of claim 86 are respectfully requested.

Claims 87, 89 and 90 stand rejected as indefinite because they recite that RUP is increased from about 27% to about 83%. This rejection is respectfully traversed. Claims 87, 89 and 90 have been amended to clarify that the increase is relative to the UPI in wet byproducts.

Accordingly, reconsideration and withdrawal of this rejection of claim 86 are respectfully requested.

Claims 109-111 and 119-122 stand rejected under 35 USC §112, second paragraph as being incomplete for omitting essential elements, such omission amounting to a gap between the elements, citing MPEP §2172.01. This rejection is respectfully traversed.

The Office Action alleges that the omitted elements are (1) a system for enhancing a nutrient value; (2) a system for determining means; (3) a system for mixing; and (4) a system adjusting means.

This rejection is respectfully traversed.

Firstly, the response to arguments portion of the Office Action indicates that it is not clear that “systems” are “apparatus.” During the aforementioned interview, the example was given that a gambler at a casino may try to beat the odds with a “system” which is actually a method of gambling. In response to this example, Applicants respectfully submit that Applicant’s system claims are apparatus claims and, in this regard, recite the apparatus in “means-plus-function” format as permitted by 35 USC §112, sixth paragraph.

For example, claim 109 positively recites a system (apparatus) that includes (1) system determining means for determining the desirable levels of crude protein, UIP/RUP, amino acids and post ruminal digestibility in an end product; (2) system determining means for determining the desirable levels of crude protein, UIP/RUP, amino acids and post ruminal digestibility in an end product; (3) system mixing means for creating a distillers, brewers or fermenters grain by-product-nutrient source mixture having an enhanced nutrient value by adding one or more crude protein and/or amino acid content nutrient sources comprising canola meal, soybean meal, sunflower meal into wet distillers, fermenters or brewers byproducts based on the crude protein, UIP protein, amino acid content, UIP/RUP amino acid content of the added nutrient sources; and (4) system adjusting means for adjusting the temperature and/or the moisture content of the enhanced nutrient value by-product-nutrient source mixture based on an empirically derived relationship that relates the UIP as a percent of the crude protein (CP) to an end product temperature in a predictable and repeatable manner to produce said end product.

The other system claims recite similar features.

During the interview, the Examiners asked why Applicants were presenting apparatus claims. In response thereto, Applicants respectfully submit that they have disclosed systems

(apparatus) for carrying out Applicants' methods, as well as Applicants' methods. In this regard, reference is made to Applicants' Fig. 1, which shows such a system, and to the portions of the Application that explain Fig. 1.

Additionally, Applicants respectfully refer the Examiner to a relatively recent court decision that highlights the importance of presenting apparatus or system claims. The decision by the Court of Appeals for the Federal Circuit in *NTP, Inc. v. Research in Motion, Ltd.*, 75 USPQ2d 1763 (Fed. Cir. 2005) points out that system claims can be particularly important, if the "overall system" is used and "beneficial use" obtained within the U.S. The question was whether the blackberry wireless email system, which includes a "relay" component in Canada, could be infringed under U.S. law. The court drew a distinction between method claims, for which every step must be performed within the U.S., and system claims, in which the infringing use must occur in the U.S.

The court concluded that the method claims were not infringed because the step of interfacing with the relay in Canada did not occur in the U.S. However, the system claims were infringed because the system as a whole was used by customers located in the U.S. The distinction is where the infringing "use" occurred. For method claims, "use" is the act of performing each of the recited steps. For system claims, "use" is the location where the system as a whole is used.

This distinction points out the value of system (apparatus) claims to an Applicant, and underscores the need for both method and apparatus claims in a U.S. patent.

Secondly, claims are considered to be definite, as required by the second paragraph of 35 U.S.C. §112, when they define the metes and bounds of a claimed invention with a reasonable degree of precision and particularity. See *In re Venezia*, 530 F.2d 956, 958, 189 USPQ 149, 151 (CCPA 1976). Applicant's claims 109-111 and 119-122 recite, and only need to recite, those elements which distinguish the invention from the prior art. The definiteness of claim language is analyzed, not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing ordinary skill in the pertinent art, *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971).

Furthermore, the Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. See in this regard, In re Swinehart, 439 F.2d 210, 160 226 (CCPA 1971).

The recitation in the claims of the various recited elements is clear, and one of ordinary skill in the art can readily determine the metes and bounds of the invention without any further recitations.

The test for compliance with the second paragraph of 35 U.S.C. §112, as stated in Miles Lab., Inc. v. Shandon Inc., 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993), cert. denied, 510 U.S. 1100 (1994) is whether one skilled in the art would understand the bounds of the claims when read in light of the specification. If the claims, read in light of the specification, reasonably apprise those skilled in the art of the scope of the invention, Section 112 demands no more. See, also, In re Merat, 519 F.2d 1390, 1396, 186 USPQ 471, 476 (CCPA 1975), which stated that the question under Section 112, second paragraph is whether the claim language, when read by a person of ordinary skill in the art in light of the specification, describes the subject matter with sufficient precision that the bonds of the claimed subject matter are distinct. See, also, In re Warmerdam, 33 F3d 1354, 1361, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

The second paragraph of 35 U.S.C. § 112 requires claims to be set out and circumscribe a particular area with a reasonable degree of precision and particularity, In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977).

All of Applicant's claims, including rejected claims 109-111 and 119-122, satisfy these requirements.

Moreover, the case cited in MPEP §2172.01 (on which this rejection is based) to require inclusion of essential structural cooperative relationships, In re Mayhew, 188 USPQ 356 (CCPA 1976), has been severely limited by the decisions of the Federal Circuit regarding the very similar Gentry Gallery case, cited below.

This Application is unlike the application in Gentry Gallery, Inc. v. Berklene Corp., 43 USPQ2d 1498 (Fed. Cir. 1998) in which the court's determination that the patent disclosure did not support a broad meaning for the disputed claim was premised on clear statements in the

written description that described the location of a claim element - the "control means" - as "the only possible location" and that variations were "outside the stated purpose of the invention", Id. at 1503. The Federal Circuit subsequently held, in Johnson Worldwide Associates Inc. v., Zebco Corp., 50 USPQ2d 1607 (Fed. Cir. 1999) that Gentry Gallery considers the situation where the patent's disclosure makes it crystal clear that a particular (i.e., narrow) understanding of a claim term is an "essential element of [the inventor's] invention." Applicant submits that this decision also limited the applicability of the In re Mayhew decision.

In this regard, Applicant's disclosure never states, or otherwise admits, that any particular feature is an essential element of the invention. Absent such an admission, there is no statutory basis to make the requirements set forth in this rejection under 35 U.S.C. §112. Accordingly, the rejection of these claims is improper and should be withdrawn.

Reconsideration and withdrawal of this rejection of claim 5 is respectfully requested.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 84-122 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,824,355 to Hietritter et al. ("Hietritter") in view of U.S. Patent 5, 219,596 to Smith et al. ("Smith"). This rejection is respectfully traversed.

In rejecting claims under 35 U.S.C. § 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital

Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A showing of a suggestion, teaching, or motivation to combine the prior art references is an “essential evidentiary component of an obviousness holding.” C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not “evidence.” See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). Moreover, a factual inquiry whether there is proper motivation to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Moreover, it is well settled that a rejection based on 35 U.S.C. § 103 must rest on a factual basis, which the Patent and Trademark Office has the initial duty of supplying. In re GPAC, Inc., 57 F.3d 1573, 1582, 35 USPQ2d 1116, 1123 (Fed. Cir. 1995).

I. Initially, Applicants note neither of these two applied references discloses or suggests a number of positive features of the claims invention.

Hietritter neither discloses nor suggests a number of positively recited features of the claims for a number of reasons.

Firstly, Hietritter does not disclose or suggest a method for predictably enhancing the nutrient value of distillers, brewers or fermenting grain products, as recited in all pending claims. The rejection never mentions this positively recited “predictable” feature of the claimed

invention, which it must do. In this regard, Applicants respectfully submit that, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). In this regard, Hietritter discloses absolutely no concept of predictably enhancing the nutrient value of grain by-products.

Secondly, Hietritter does not (1) determine specific desirable nutrient values of an end product; and (2) creating a distillation and/or fermentation by-product-nutrient source mixture having an enhanced nutrient value by (a) adding one or more crude protein and/or amino acid content nutrient sources comprising canola meal, soybean meal, sunflower meal into wet distillers, brewers or fermenters byproducts based on the crude protein, UIP protein, amino acid content, UIP/RUP amino acid content of the added nutrient sources to create an enhanced nutrient value by-product-nutrient source mixture of the distillation or fermentation byproducts; and (b) adjusting the temperature and/or the moisture content of the enhanced nutrient value by-product-nutrient source mixture based on an empirical relationship that relates the UIP as a percent of the crude protein (CP) to an end product temperature to produce said end product with those specific desirable nutrient levels, as claimed. Hietritter does not disclose this combination of features. All that Hietritter performs is step (2). In this regard, Hietritter merely mixes various ingredients, adds water, cooks them, comes up with end products, and measures certain nutrient values. That's it. Hietritter simply does not disclose or suggest performing steps (1) and (3), which are a positively recited part of Applicants' unique processes.

Thirdly, with respect to claim 86, the Office Action does not even address this specific positively recited feature of adjusting UIP as a percent of the crude protein according to a specific recited formula which is nowhere to be found, either explicitly or inherently (i.e., necessarily disclosed) in Hietritter.

Fourthly, Smith, the secondary reference in the applied reference combination, fails to disclose or suggest any of the features that are missing from Hietritter. Accordingly, no matter how these references are combined, the resulting reference combination cannot possibly disclose these missing positively recited claimed features.

The Office Action fails to make out a *prima facie* case that Hietritter, the base reference used in the applied reference combination, discloses a number of positively recited features of the claimed invention.

Moreover, Applicants respectfully submit that following Heitritter's teachings will never result in the claimed invention in the sense that Heitritter never adds any nutrient values to his starting product to increase its nutrient value before heating it or adding water to it, as claimed. In this regard, the Office Action fails to provide objective factual evidence that one of ordinary skill in the art would be properly motivated to modify Heitritter to add any nutrients to his starting product to increase its nutrient value, especially where Heitritter's starting material already has reasonable levels of nutrient values.

Applicants respectfully submit that Applicants' claimed invention involves realizing something that none of the applied art realizes and recites a method that capitalizes on that something, i.e., an empirically derived formula that they realized can be used in the claimed method, whereas neither the knowledge of the existence of the empirical formula nor the claimed method ever has existed, nor is in any way suggested by, the applied art.

The Office Action continues by admitting that Hietritter does not disclose (1) wet distillers, brewers or fermenters grain byproducts as a part of the product base, as recited in claims 84, 103, 105, 109, 112, 114, 115 and 119; (2) a specific ratio of wet distillers grain to soy meal as recited in claim 91; (3) the percentage of RUP that has increased, as recited in claims 87, 96, 106, 110, 116 and 122; (4) a drying temperature of 350-500 degrees Fahrenheit, as recited in claim 98; and (5) and the parameters and equations as recited in claims 86, 89, 90, 94 and 95.

Actually, these are not all of Hietritter's shortcomings. Hietritter does not (1) predetermine nutrient values of the end product; (2) add any nutrient source that would affect the protein and/or amino acid levels; (3) predict end product UIP level according to temperature achieved during cooking and/or drying, whereas Applicants disclose adjusting the temperature and/or the moisture content of the enhanced nutrient value by-product-nutrient source mixture based on an empirical relationship that relates the UIP as a percent of the crude protein (CP) to an end product temperature to predictably achieve desired nutrient values, and even recite in claim 86, a specific empirically obtained formula to predict this: $UIP(\% \text{ of CP}) = (\text{End product}$

temperature $^{\circ}\text{F} \times 0.819 - 107.644$; or (4) mention the use of any fermentation products, either wet or dry.

In the previous Office Action, in an attempt to remedy Hietritter's admitted deficiencies, the Office Action turned to Smith, which discloses that "by properly adjusting a particular feed composition to deliver essential amino acids in balance post-rationally, overall production is enhanced and deficiencies and excesses are minimized" – see col. 2, lines 16-19 of Smith.

Despite the admitted shortcomings of Heitritter, the Office Action does not turn to a secondary reference to modify Heitritter as it turned to Smith to modify Heitritter in the previous Office Action. The secondary reference relied on in the outstanding rejection is not used to provide the teaching that Smith was used to supply. This is a tacit admission that the outstanding rejection based on Heitritter and the current secondary reference is inadequate. Turning to the newly applied secondary reference, i.e., Schingoethe, Applicants respectfully submit that Schingoethe presents a review of known studies on feeding both wet and dry corn distillers grains. In all these studies using lactating dairy cows, a total ration has to be made so that all their nutrient requirements are satisfied. The corn distillers grains would have been mixed in with the minerals, vitamins, wet corn silage, wet hay/silage, dry hay, grain products (including ground corn, wheat middlings, etc.) and protein products according to the experimental protocol. This is all done at the farm level and there is no disclosure that further processing is, or can be, performed on any single ingredient at that time.

Moreover, Applicants submit that it would be deleterious to try to heat up this total mixed ration in the hopes of increasing the RUP because a cow needs only about 35% of her protein in the form of RUP and any increase in RUP beyond this is wasteful - plus it would take valuable RDP (rumen degradable protein) away from the cow.

Combining the teachings of Heitritter and Schingoethe leaves us with a total mixed ration for lactating dairy cows. Applicants respectfully submit that looking at the 40 to 50 ingredients going into this ration will properly motivate one of ordinary skill in the art to start mixing wet materials with dry ones and then heat treating until they are dry.

In this regard, Applicants respectfully point out that, as Schingoethe discloses, corn distillers grains have been available for as long as alcohol has been distilled. Over the past 1000

years or more, this material undoubtedly has been fed to livestock. Similarly, soybean production has been in practice for the past 100 years or more and its waste product (soybean meal) has also been fed to animals. With such a long history for each, the fact that no one has combined the two in the production of a novel ingredient indicates that it is not obvious for one trained in the art to do so.

The Office Action also states that, regarding an empirical formula as describing the method of enhancing the feed product taught by Heitritter, Heitritter teaches two specific points (the RUP/UIP levels and coordinating end product temperatures) which allegedly permits derivation of an empirical formula that relates UIP and the end product temperatures to alternatively explain the method of increasing the nutrient value in the fed product as taught by Heitritter.

Applicants do not fully understand this rejection as it relates to disclosing the claimed feature of predictably enhancing the nutrient value of a feed product based on an empirical formula, and respectfully submit that Heitritter completely fails to disclose the claimed empirical formula for RUP production for the following reasons:

1) Heitritter gives data in only one of his examples, i.e., Table II, concerning temperature and RUP. In the explanation of the table he states that the cooked material had a temperature of 200°F and the table shows that this material reached a RUP of 69.6% of the crude protein as compared to only 25.6% RUP in the uncooked product. In order to draw a line between these two points so as to calculate the slope of the line we need to know the temperature of the uncooked product. We assume it was "ambient temperature," but Heitritter does not explicitly state what it is. Further, in this regard, if the production was done in a heated building this temperature might be about 70 degrees F., and if the production was done in an unheated building (as is the norm in production) the temperature may be close to freezing as in the winter or above 85 degrees F., as in the Summer.

For statistical analysis of the data set one needs paired values, that is a series of RUP values for given cooked temperatures. As indicated above, the paired value for the first RUP reported by Heitritter is not disclosed, and thus no statistical analysis of Heitritter's data is possible.

Contrarily, the Haschen-Patterson data has multiple paired measurements (see table 14). Regression analysis was computed on the various paired measurements given in this table using the statistical package found in Microsoft Excel. The results of this analysis for the independent variable of product temperature and the dependent variable of UIP/RUP is given in table 8, which is reproduced below for the Examiner's convenience.

The r^2 value of 0.8568 means that 85.68% of the variation in the UIP/RUP value is determined by the temperature the product reached while cooking (end temperature). This is highly statistically significant as indicated by the F value and the significance is calculated as 0.000343, which means that 99.97% of the time this relationship will hold true. The analysis gives us the y intercept as -107.644 and the x variable as 0.8190. This means that the empirical formula for calculating the UIP/RUP is as follows:

$$\text{UIP}(\% \text{ of CP}) = (\text{EndTemp } ^\circ\text{F} \times 0.819) - 107.644$$

Regression Analysis of Experimental Mixtures

TABLE 8

REGRESSION OF UIP % OF CP AND END TEMPERATURES
 SUMMARY OUTPUT

<u>Regression Statistics</u>	
Multiple R	0.9250589
R Square	0.856844399
Adjusted R Square	0.836393598
Standard Error	3.338503243
Observations	9

<u>ANOVA</u>					<u>Significance F</u>
	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	
Regression	1	466.9787529	466.9787529	41.89784214	0.000342767
Residual	7	78.01922732	11.1456039		
Total	8	544.9989802			

	<u>Coefficients</u>	<u>Standard Error</u>	<u>t Stat</u>	<u>P-value</u>	<u>Lower 95%</u>	<u>Upper 95%</u>	<u>Lower 95.0%</u>	<u>Upper 95.0%</u>
Intercept	-107.644082	26.91669969	-3.9991564	0.00510549	-171.2919273	-43.9062566	171.2919273	43.99625659
X Variable 1	0.818990743	0.126525442	6.47285425	0.000342767	0.519795029	1.118165656	0.519795029	1.118165656

<u>End Temp</u>	<u>UIP% CP Average</u>
195	53.68
218	74.60
229	82.93
208	65.87
218	67.48
209	62.07
214	65.32
208	63.31
214	62.75

Heitritter does not teach of the points of RUP/UIP levels and temperatures. Applicants respectfully submit that there is no way that such relationships can be extrapolated from Heitritter's disclosed data because Heitritter discloses only one value for his cooking temperature.

Additionally, Heitritter discloses that his product reaches a temperature of 200 degrees Fahrenheit and that this results in a RUP value of 69.9% of the crude protein. If one enters the 200 degrees Fahrenheit into Applicants' empirical formula, the result is an RUP value of 56.16%, and not the 69.9% that Heitritter discloses. Thus, Heitritter does not achieve, or anticipate, or suggest, or otherwise render obvious, the claimed invention.

Furthermore, Applicants respectfully submit that, while Heitritter demonstrates a method of creating a higher rumen bypass protein by cooking a mixture of oil seed meal mixed with hulls, Heitritter does not enhance the mixture he is creating to change any of the protein and/or amino acid levels appreciably and he never does it predictably nor does he provide one of ordinary skill in the art the data that would permit them to do so, even with further invention. Heitritter simply cooks the product to increase the UIP/RUP. Heitritter's feeding of this product to lactating cows further demonstrates that the UIP was indeed increased as was measured when the sample of product was incubated in the rumen of a cow and measured for protein disappearance. This was the method that gave the value of 69.9% RUP as % of CP. Feeding to the lactating cows in the experiment did not yield a value for the RUP other than to indicate it had increased.

Applicants' claimed invention is completely different. Applicants' claimed process enhances corn distillers dried grains by changing the crude protein and amino acid levels so that it has more economic value by mixing the wet corn distillers grains with a nutrient source, e.g., soybean meal, at predetermined levels in order to achieve a variety of outcomes. This mixture is then heated to specific temperatures, based on an empirically derived relationship (formula), to achieve the desired levels of UIP/RUP. Use of this claimed method results in production of a multitude of feed products with predictably enhanced nutritional values that meet the needs of different users.

Furthermore, Heitritter does not predetermine the levels of crude protein and amino acids or the UIP/RUP that the end product will contain. He makes the product and then analyses to see what levels were achieved. His process does not vary so that a variety of outcomes will be possible.

Additionally, these two references teach away from being combined, as suggested. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the Appellant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the Appellant. See W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1550-51, 220 USPQ 303, 311 (Fed. Cir. 1983) (the totality of a reference's teachings must be considered), cert. denied, 469 U.S. 851 (1984); In re Sponnoble, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969) (references taken in combination teach away since they would produce a "seemingly inoperative device"); In re Caldwell, 319 F.2d 254, 256, 138 USPQ 243, 245 (CCPA 1963) (reference teaches away if it leaves the impression that the product would not have the property sought by the Appellant). See, In re Gurley, 31 USPQ2d 1130 (Fed. Cir. 1994).

In this regard, Heitritter's invention uses oil seed meals mixed with hulls (example soybean meal and soybean hulls). Heitritter's patent calls for the use of oil seed meals. Oil seeds are plants that are grown specifically for their high oil content, the most common in North America being soybeans (18% oil), canola (40% oil), sunflowers (25% oil) and flax (35% oil). There are a few other crops from which oil is extracted but as a secondary product and these include peanuts, cotton and corn. Corn has about 3.5% oil in the grain and corn oil is extracted only after the oil has been concentrated in some of the byproducts formed during the refining of corn starch. **Corn is grown for its starch content and not its oil and is never considered an oil seed.** Corn is also very low in crude protein being about 7 to 9% and thus does not suit this invention. Heitritter does not mention "corn" or "corn byproducts" in the patent because they are not suitable for his end product. Adding soybean hulls based on Schingoethe's generic historical disclosure would not enhance the nutrient source and, in fact, would reduce the nutrient levels because the hulls are very much inferior in nutrient levels compared to soybean meal. As example of this, consider that soybean meal is about 48% crude protein and soybean hulls are only about 10% crude protein. Mixing the two will result in a product that is below 48% crude

protein. Therefore, one of ordinary skill in the art will not be properly motivated to modify Hietritter in view of Schingoethe, as suggested.

More importantly, even if it were obvious to modify Hietritter in view of Schingoethe, which it is not for reasons discussed above, Hietritter, as modified, would not disclose or render obvious the claimed invention because Hietritter lacks two of the three positively recited features in the independent claims under rejection.

III. The Office Action further asserts that it would be obvious to one of ordinary skill in the art to include an increase in the amount of RUP depending on the desired final product and the amount of RUP in the starting material (see page 6, last three lines). Unfortunately, absolutely no factual evidence, let alone any objective factual evidence, is presented to support this speculative conclusion. Moreover, as pointed out above, both applied references fail to contain a disclosure of several positively recited features, including the predictability feature and steps (1) and (3), as discussed above. In other words, this assertion attempts to make something out of nothing, i.e., lack of disclosure, but that is not logically possible. Accordingly, this assertion is improper and should be withdrawn.

IV. With respect to the UIP as a percentage of the crude protein that is recited in claims 86, 96, 106, 110, 116 and 112, the claimed percentages are simply not disclosed nor are they obvious. The only stated basis for rejection these claims under 35 USC §103(a) rests on the "112 rejections above." That rejection indicated that it was unclear what RUP source feed is increased and what initial amount of RUP is increased. In this regard, Applicants respectfully submit that the initial RUP is what is in the created distillation and/or fermentation by-product-nutrient source mixture recited in those claims. The claimed percentages of the UIP as a percentage of the crude protein is simply not disclosed or suggested by Hietritter.

V. With respect to the claimed range of 350 to 500 degrees Fahrenheit, Hietritter teaches away from using the claimed air temperature range, because Hietritter sets upper limits on its temperature range to avoid overcooking. The only way that Hietritter could reach the claimed temperature range would be to shorten the time of cooking, which is taught by Applicants but neither disclosed nor suggested by Hietritter. The conclusion that it would be obvious to achieve the claimed temperature range overlooks the fact that Hietritter presents no

clue to a skilled worker of how its invention would not be overcooked at the claimed temperature range. In other words, there is not enough disclosure in either Hietritter, or Smith (which does not even use cooking) to render the claimed temperature range obvious. This is also another reason why the proposed use of distillers grains would not be obvious to use in Hietritter.

VI. Furthermore, with respect to claim 86, this claim recites more than a specific range. Claim 86 positively recites that the UIP as a percent of the crude protein is adjusted according to a specific formula – which is nowhere disclosed or suggested by any of the applied art.

VII. Additionally, with respect to claims 86, 89, 90, 94 and 95, the Office Action says that because it is not equipped to manufacture the product, the burden shifts to Applicants to demonstrate that the prior art product used in rejecting the claimed invention is different. While Applicants disagree with this proposition that the burden shifts to Applicant because the Office does not have the wherewithal to test the products disclosed or suggested by the Hietritter/Smith reference combination, no case law is presented to support this unique argument, which is contrary to all of the case law cited above. In fact, it is contrary to the established case law cited above.

VIII. Moreover, as noted above, claim 86 recites more than a specific range of values. Claim 86 positively recites that the UIP as a percentage of the crude protein is adjusted according to a particular empirically established formula determined by Applicants that is neither disclosed nor suggested by either of the applied references. In this regard, it is instructive to note that the claimed ranges in these claims under rejection are readily obtainable because of Applicants' invention and are not contemplated by either of the applied references, neither of which discloses any understanding of the claimed invention.

IX. A fair balanced review of the applied art reveals that neither applied reference comes close to disclosing or suggesting Applicants' claimed invention because, for example, neither applied reference (1) predetermines nutrient values of an end product; or (2) predicts end product UIP level according to temperature achieved during cooking and/or drying. Accordingly, even if one of ordinary skill in the art were properly motivated to combine these

two references is some way (which they are not, at least for reasons discussed above), the resultant modification of Hietritter would not result in, or render obvious, the claimed invention.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

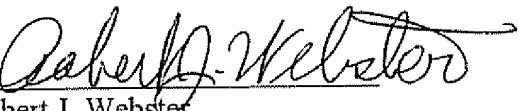
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8076, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: March 14, 2007

Respectfully submitted,

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